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OBSERVATIONS ON TRAINING SCHOOLS FOR FLOCK-SELECTING AND PULL-
ORUM-TESTING AGENTS AND SUGGESTIONS FOR THEIR IMPROVEMENT

Schools for training flock-selecting and pullorum-testing agents are held annually by the State colleges of agriculture in a majority of the States cooperating in the work of the National Poultry Improvement Plan. It has been the policy of the Bureau of Animal Industry to have the poultry coordinators attend as many of these as possible, appear on the program, and otherwise assist with the instruction.

There is a wide variation in the type of the schools held in different States, and while the training as a whole is excellent, some are much better than others. In a few cases the schools are more in the nature of poultry short courses, and not enough time is devoted to the training in selection, blood-testing for pullorum disease, and in the provisions of the plan.

The following notes and suggestions are offered from observations made by the coordinators at the 1943 schools:

(1) Preliminary planning.--Those responsible for conducting the school might well be called together some time in advance to develop a program; each person being given definite responsibilities. Most of the States now follow this procedure. To hold a good school requires careful planning, and the ideas of the whole staff should be considered.

Every hatcheryman within the State, who might be interested in taking the training or in having someone from his organization qualify as an agent, should be informed of the course and when and where it will be held. Publicity through the press, the radio, and by circular letters to hatcherymen and extension workers will accomplish this purpose. Good publicity in regard to the training course is also good publicity on the plan.

In a few States, those who expect to qualify as agents are required to make application in advance to take the course. Bulletins and circular material are then sent to them for study at home before coming to the school. This appears to be a good procedure.

(2) Personnel.--Full use should be made of the talents and abilities of the local college staff, not only of the poultry and veterinary departments, but of other departments as well. A representative from the Agricultural Economics Department might discuss the hatchery situation. Representatives of the official State agency and livestock sanitary authorities should certainly be on the program, and a successful hatcheryman or breeder can often add much to the discussions. Where possible, one or more out-of-State speakers should be included to bring in new thoughts and ideas.

(3) Organization.--The first day might be arranged for new candidates only, who are taking the course for the first time. Elementary instruction on the provisions of the plan, selection, and blood testing would be scheduled for that day. More advanced work could be planned for the following days, which would be of interest to those who have attended previous training schools. At one school, a special section was set up for the advanced students,

and such subjects as breeding principles and hatchery management were discussed. This will avoid the common criticism by agents, who have returned to the school a second or third year, that there is too much "sameness" and too much elementary work. Elementary instruction is quite necessary for beginners, but it is boring for those who have taken the course before.

Group discussions are often more effective than formal lectures. The use of charts, testing equipment, live birds, and demonstration material will help to hold the interest of the students.

(4) Length of school.--It is recommended that for a combination flock-selecting and pullorum-testing school, at least three full days should be devoted to selection, blood testing, provisions of the plan, and examinations. This should be the minimum. If additional subjects are discussed, such as feeding and management, the school should be longer than three days. For a flock-selecting school, or for a pullorum-testing school, where the two are not given together, it is recommended that at least two full days be devoted to selection, or to testing, along with a study of the provisions of the plan.

The following outline is suggested for a five-day school:

First day

Elementary instruction for beginners

Second day

Hatchery day. All hatcherymen in State invited.

Have strong program with out-of-State speakers.

Business meeting of hatcherymen's association or official State agency.

Third, fourth, and fifth days

Lectures and laboratory work with plenty of time for group discussions of problems in regard to the poultry improvement work. Examinations, which usually take about two or three hours, held afternoon of final day.

(5) Lectures and subject matter discussions.--At some of the schools the instruction has been excellent on certain subjects, but inadequate on others. For a well-rounded course in flock-selecting and pullorum-testing, the students should be thoroughly trained in all phases of the work, as well as in the provisions of the plan.

Each State poultry department has developed its own system of training in culling and selection. At one of the very successful schools, the class is divided into five small laboratory groups, with an instructor in charge of each. One group studies pigmentation, another group studies molt, another works on handling qualities, another on standard qualities, and the fifth group studies disqualifications. The groups are then rotated at intervals until each student has attended all five sections.

A school which gave some of the best instruction on culling and selection used the following plan. The four topics, pigmentation, molt, handling qualities, and standard qualities, were studied separately. After a detailed lecture to the whole class on pigmentation, with charts and lantern slides, the group was broken into small laboratory sections and at least one and one-half hours were spent in studying the topic with live birds. This was followed by a lecture to the whole class on molt and then one and one-half hours laboratory practice. Then handling qualities and standard qualities were taken up in a similar way. Following a study of the topics separately, the students were then given a group of birds to classify as excellent, good, medium, or poor, and asked to state whether the bird should be kept in the flock or rejected.

The study of breeds and varieties should be limited to those commonly found in the State. There is no need, with the little time available, to study breeds and varieties, which the agents will probably never work with.

Some States emphasize standard qualities more than others but, regardless of the emphasis, flock-selecting agents should be familiar with standard qualities of the common breeds and should be able to recognize all standard disqualifications that apply to those breeds. The plan requires all U.S.R.O.P. birds to be free from standard disqualifications. U. S. Approved and U. S. Certified flocks are "to combine standard-bred and production qualities to a reasonably high degree".

Lectures and discussions on pullorum disease, sometimes with demonstrations, usually precede the laboratory work or blood testing. A testing agent cannot be expected to be a pathologist, but he should know a little about the cause and nature of the disease and principles involved in the test. He should be told of the two official types of antigens, Regular and TG, and the type which is used in his State, and that other antigens have not been recognized as official. He should be cautioned in regard to the care of the antigen and date of expiration. The necessary equipment should be discussed and a demonstration given on the proper use of the equipment.

In a few of the schools, not enough time is allotted to the discussion of the plan provisions. Flock-selecting and pullorum-testing agents should be thoroughly familiar with the organization of the plan, its objectives, the breeding stages and pullorum classes, and both national and State regulations. This will require, on the part of the students, some diligent study of Miscellaneous Publication No. 300, as well as discussion in the classroom.

It is especially important that new agents be given instruction on how to order supplies and make reports, and often the older agents need the information too. Much confusion will be avoided at the beginning of the selecting and testing season if the agents leave the school with this knowledge. It is suggested that each student be required to fill out a copy of the flock-selecting and pullorum-testing report (N.P.I.P. Form 3 or substitute State form) in the class, using data

from one of the flock reports of the previous year, and that this be followed with a discussion. The filling out of a report for a specified flock makes a good question on the final examination.

Breeding principles, the value and the use of R.O.P. males and Victory Cockerels, the closed flock system, early selection of cockerels, management of hatchery-supply flocks, and discussions on hatchery operation might well be included in the program the day devoted to the hatchery meeting.

(6) Laboratory.-- At many of the schools the students were not divided into small enough groups to do effective laboratory work. Conditions vary widely and available equipment is a factor but, in most cases, it would be desirable to have not more than twenty persons to the section.

Coops, testing plates, bleeding needles and loops, testing tables, and other needed equipment should be provided in sufficient quantity for adequate instruction and practice. Each student in a laboratory section should have a set of equipment and, if necessary, a small enrollment or laboratory fee might be charged to provide the money for equipment. One type and make of antigen only should be used at a training school. The use of two or more different antigens may cause confusion, as there is sometimes a slight difference in color or reaction between antigens.

It is difficult to provide enough birds for a large class, and it is injurious to the birds to have them handled by a large number of persons, but practice in handling live birds is a very necessary part of the instruction. For selection, it is suggested that at least two classes of twenty birds in separate numbered coops be used. More would be better. There should always be more birds than persons in the section. Another group of birds should be provided for the examination. Birds with standard disqualifications and reactors should be collected during the year. At some of the schools, the students were taken out to the laying house and the selection and blood testing carried on there, but this is not practical with large classes.

Beginners should be instructed on how to place the leg band on a bird and how to seal it properly. He should then be required to band correctly at least five birds. While an agent in the field usually has someone else to do the banding for him, he is responsible in seeing that the birds are properly banded.

A laboratory on selection for fast feathering at 1 day, 10 days, and 4-12 weeks of age, might well be included in the program.

There is also a need for a special laboratory section on the selection of cockerels for the breeding pens, although most schools do not include much on the subject.

At one school, there was an exhibit of good and poor hatching eggs in trays, both white and brown, demonstrating difference in size, shell texture, etc.

A display of birds with different symptoms of leukosis, with special emphasis on the eye type, is of value in training the agents what birds to remove from the flock.

An exhibit of various types of commercial and homemade testing boxes, cabinets and holding tables enables the students to examine and compare their good and bad points.

For elementary training in pullorum testing, oxylated blood is often used but when this is done, wide-mouthed containers, instead of test tubes, should be used so that blood can be picked up with the loop. At two of the schools the past year, what appeared to be a better plan was observed. Live birds that were different types of reactors were selected in advance. A bird was held by the instructor with the wing open. The skin on the inner side of the wing was mopped with a 2 percent solution of sodium citrate to prevent clotting, the vein punctured, and the blood permitted to puddle in the hollow of the wing. Each student passed by with a test plate and blood loop. He placed a drop of antigen on his plate, then a loopful of blood from the hen, stirring them together as he walked back to his seat, and observed the reaction. Thus, as many as 40 students could each obtain a sample of blood from one hen with one puncture with no injury to the hen.

After this preliminary training to illustrate the difference between a reactor and a nonreactor, the different types of reactions, and how to make a proper size smear, each student should be required to blood test at least five birds. More would be better, but it has been found that practice in blood testing must be obtained in the field after the training school. The principles and correct technique only can be taught at the school. Skill and experience must be acquired later.

In many States, each new candidate, after attending the school and passing examinations, is required to spend a day in the field with one of the State pullorum testers actually blood testing one or more flocks before being authorized as a pullorum-testing agent.

(7) Examinations.-- The preparation of adequate examination material, both written and practical, requires time and thought.

The questions should be made out and mimeographed before the school, as there is seldom time to give the matter much thought after the school begins.

Examinations serve several useful purposes. Among these are: (1) An incentive to make the candidate study and to learn the more important points covered in the course. If the candidate is made to understand from the first that he will be held responsible on his examinations for anything taken up or discussed during the school he is more likely to keep on the alert, to take notes, and to remember what is discussed. (2) An aid to the instructor in showing him how well his work has been done. If it is found that a large percentage of the class has failed to learn certain important facts, evidently the instructor or type of instruction is at fault. (3) A measure of the students knowledge and ability. While a student may study hard, pass examinations satisfactorily, and then not make a good flock-selecting or pullorum-testing agent, a passing grade on the examinations should be a basic requirement. The examinations, in addition to written questions, should include the handling of birds.

Since many of the candidates who want to qualify as flock-selecting or pullorum-testing agents are not in the habit of expressing themselves on paper, it is not thought advisable to put the emphasis on discussion questions, although some questions of this type may be included. The multiple-answer type and true and false statements are to be preferred, and have the further advantage of being easier to grade. By referring to the Manual on Training Schools for Flock-Selecting and Pullorum-Testing Agents, page 25, a good discussion will be found on the preparation of an examination.

At one school, a true-false test (50 statements) was given the class unannounced at the first session. The papers were corrected and returned to the students the next morning. This stimulated thought and tended to focus the attention of the class on things that they did not know. Unannounced, the same test was given as a part of the final examinations the last day.

(8) A score card for flock-selecting and pullorum-testing schools is included as the last page of this report. It is suggested that those responsible for the conduct of the school in each State fill out the score card for last year's school. Each item should be checked as to whether it was outstanding, satisfactory poor to good, or not included in the program. The score card may also serve a useful purpose as a check on the arrangements that are being made for this year's school. Conditions vary widely in different sections of the country, and the suggestions and score card may not apply in all details to every State.

A conscientious effort should be made to make each school a little better than the preceding one. At one school last year, the committee had a "suggestion box" always readily available. The students were requested to put their suggestion for improvement into the box whenever the idea occurred to them. These suggestions will be studied in planning the next school.

SCORE CARD FOR FLOCK-SELECTING AND PULLORUM-TESTING SCHOOLS

State _____ Type of school _____ Compiled by _____

Dates held _____ Flock- selecting _____ Pullorum- testing _____ General _____ Total _____
No. days: _____

Item	Out- standing	Satis- factory	Poor to good	Not in- cluded	Remarks
(1) Preliminary:					
<u>Planning with staff</u>					
<u>Publicity and circular letters</u>					
<u>Home study material mailed in advance</u>					
(2) Personnel:					
<u>Adequate local staff</u>					
<u>Outside speakers</u>					
(3) Organization:					
<u>One day especially for beginners</u>					
<u>Special provisions for advanced students</u>					
<u>Group discussions</u>					
<u>Demonstrations and visual instruction</u>					
(4) <u>Length of school (see recommendations):</u>					
(5) <u>Lectures and subject matter discussions:</u>					
<u>Selection--</u>					
<u>Production</u>					
<u>Standard</u>					
<u>Pullorum-testing--</u>					
<u>Cause and nature of disease</u>					
<u>Explanation of test</u>					
<u>Types and use of equipment</u>					
<u>Antigen: types, care, age, etc.</u>					
<u>N.P.I.P. provisions and administration--</u>					
<u>National</u>					
<u>State</u>					
<u>Records and reports</u>					
<u>Breeding principles and application</u>					
<u>Hatchery operation</u>					
(6) <u>Laboratory:</u>					
<u>Size of sections</u>					
<u>Equipment provided</u>					
<u>Birds provided</u>					
<u>Selection (demonstration and practice)</u>					
<u>Pullorum-testing (practice)</u>					
<u>Students time fully occupied</u>					
(7) <u>Examinations:</u>					
<u>True-false or multiple-answer type</u>					
<u>Discussion type</u>					
<u>With live birds</u>					

